



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/580,270	05/25/2006	Hiroyuki Takebe	1254-0314PUS1	5965
2292 7590 01/27/2009 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747				
EXAMINER HSIEH, PING Y				
ART UNIT 2618		PAPER NUMBER		
NOTIFICATION DATE 01/27/2009		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary**Application No.**

10/580,270

Applicant(s)

TAKEBE, HIROYUKI

Examiner

PING Y. HSIEH

Art Unit

2618

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10-13 and 19-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-13 and 19-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 7/18/08
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/21/08 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
4. Claims 1, 2, 3, 11-13 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda (U.S. PATENT NO. 7,269,440) in view of Ono et al. (U.S. PG-PUB NO. 2001/0044320).

-Regarding claim 1, Ueda discloses a folding cellular wireless unit **(as disclosed in fig. 4-6)** comprising a first casing containing a first circuit member **(first printed substrate 37a, fig. 6)**, a second casing containing a second circuit member **(second printed substrate 37b, fig. 6)**, an antenna disposed at one end of said first casing **(antenna 36, fig. 6)**, and a hinge portion via which the other end of said first casing and one end of said second casing are connected such that said first casing and said second casing can be rotated relative to each other in a hinged manner **(hinge 33 as disclosed in fig. 4 and further disclosed in col. 7 lines 43-52)**, said folding cellular wireless unit further comprising: a first connecting conductor connected to said first circuit member at said other end thereof **(the base contact 61 as disclosed in fig. 6 and further disclosed in col. 8 lines 29-37)**, and a second connecting conductor connected to said second circuit member at said one end thereof **(the base contact 71 as disclosed in fig. 6 and further disclosed in col. 8 lines 38-46)**, wherein said first connecting conductor and said second connecting conductor are disposed at least partly opposite to each other at a certain interval **(as disclosed in fig. 6)**. However, Ueda fails to disclose the normal direction of both said one plane of said first connecting conductor and said one plane of said second connecting conductor are substantially parallel to the direction in which said hinge portion extends, each connecting conductor includes an at least partly ring-shaped portion and substantially the entire at least partly ring-shaped portion is conductive.

Ono et al. disclose the normal direction of both one plane of a first connecting conductor (**plane of the first ring shaft 261 shown in fig. 7**) and one plane of a second connecting conductor (**plane of the second ring shaft 266 shown in fig. 7**) are substantially parallel to the direction in which the hinge portion extends (**the normal direction of the plane of the first ring shaft 261 shown in fig. 7 and the normal direction of the plane of the second ring shaft 266 shown in fig. 7 are parallel to the direction in which the center shaft 262 extends as disclosed in fig. 7 and further disclosed in paragraph 51**), each connecting conductor (**elements 264 and 271 as shown in fig. 7**) includes an at least partly ring-shaped portion and substantially the entire at least partly ring-shaped portion is conductive (**as shown in fig. 7 and further disclosed in paragraph 51-53**).

Therefore, it would have been obvious to one of ordinary skills in the art at the time of invention to modify the cable 47 as disclosed by Ueda to be replaced with the first ring shaft 261, the second ring shaft 266 and the center shaft 262 as disclosed by Ono et al. One is motivated as such in order to provide a wireless apparatus having a foldable structure allowing improved antenna condition when the terminal is opened.

-Regarding claim 2, the combination further discloses a magnetic member disposed in proximity to the electric connecting means between said first circuit member and said second circuit member (**Ueda, cable 47 as disclosed in fig. 6 and further disclosed in col. 8 lines 50-57**).

-Regarding claims 3 and 19, the combination further discloses said planes of said first and said second connecting conductors are disposed opposite to each other at said hinge portion **(Ono et al., as disclosed in fig. 7 and further disclosed in paragraph 51)**.

-Regarding claim 11, Ueda discloses a rotary cellular wireless unit **(as disclosed in fig. 4-6)** comprising a first casing containing a first circuit member **(first printed substrate 37a, fig. 6)**, a second casing containing a second circuit member **(second printed substrate 37b, fig. 6)**, an antenna disposed on one end of said first casing **(antenna 36, fig. 6)**, and a connecting portion via which the other end of said first casing and one end of said second casing are connected **(cable 47 as disclosed in fig. 6 and further disclosed in col. 8 lines 50-57)** such that said first and said second casings are rotatable while they maintain a substantially parallel relationship **(as disclosed in fig. 4-6)**, said cellular wireless unit further comprising: a first connecting conductor connected to said first circuit member at said other end thereof **(the base contact 61 as disclosed in fig. 6 and further disclosed in col. 8 lines 29-37)**, and a second connecting conductor connected to said second circuit member at said one end thereof **(the base contact 71 as disclosed in fig. 6 and further disclosed in col. 8 lines 38-46)**, wherein said first connecting conductor and said second connecting conductor are disposed at least partly opposite to each other at a certain interval **(as disclosed in fig. 6)**. However, Ueda fails to disclose the normal direction of both said one plane of said first connecting conductor and

said one plane of said second connecting conductor are substantially parallel to the direction in which said hinge portion extends, each connecting conductor includes an at least partly ring-shaped portion and substantially the entire at least partly ring-shaped portion is conductive.

Ono et al. disclose the normal direction of both one plane of a first connecting conductor (**plane of the first ring shaft 261 shown in fig. 7**) and one plane of a second connecting conductor (**plane of the second ring shaft 266 shown in fig. 7**) are substantially parallel to the direction in which the hinge portion extends (**the normal direction of the plane of the first ring shaft 261 shown in fig. 7 and the normal direction of the plane of the second ring shaft 266 shown in fig. 7 are parallel to the direction in which the center shaft 262 extends as disclosed in fig. 7 and further disclosed in paragraph 51**), each connecting conductor (**elements 264 and 271 as shown in fig. 7**) includes an at least partly ring-shaped portion and substantially the entire at least partly ring-shaped portion is conductive (**as shown in fig. 7 and further disclosed in paragraph 51-53**). Each connecting conductor includes an at least partly ring-shaped portion and substantially the entire at least partly ring-shaped portion is conductive.

Therefore, it would have been obvious to one of ordinary skills in the art at the time of invention to modify the cable 47 as disclosed by Ueda to be replaced with the first ring shaft 261, the second ring shaft 266 and the center shaft 262 as disclosed by Ono et al. One is motivated as such in order to provide a wireless

apparatus having a foldable structure allowing improved antenna condition when the terminal is opened.

-Regarding claim 12, the combination further discloses the area of one plane of said first connecting conductor and one plane of said second connecting conductor which is disposed at least partly opposite to each other at a certain interval varies depending on the rotation (**Ono et al., as disclosed in fig. 7 and further disclosed in paragraph 51**).

-Regarding claim 13, the combination further discloses as said casings are rotated relative to each other in a hinged manner (**Ueda, first and second bodies 37a and 37b are foldable about the hinge 33 as disclosed in fig. 6 and further disclosed in col. 10 lines 21-26**), the effective casing length relative to said antenna is adjusted in a direction such that the drop of antenna efficiency is prevented (**Ueda, ground length L1 and L2 as disclosed in fig. 6 and further disclosed in col. 10 lines 7-34**).

-Regarding claim 21, Ueda discloses a folding cellular wireless unit (**as disclosed in fig. 4-6**) comprising a first casing containing a first circuit member (**first printed substrate 37a, fig. 6**), a second casing containing a second circuit member (**second printed substrate 37b, fig. 6**), an antenna disposed at one end of said first casing (**antenna 36, fig. 6**), and a connecting portion via which the other end of said first casing and one end of said second casing are connected such that said first casing and said second casing can be rotated relative to each other (**hinge 33 as disclosed in fig. 4 and further disclosed in**

col. 7 lines 43-52), said folding cellular wireless unit further comprising a first connecting conductor connected to said first circuit member at said other end thereof **(the base contact 61 as disclosed in fig. 6 and further disclosed in col. 8 lines 29-37)**, and a second connecting conductor connected to said second circuit member at said one end thereof **(the base contact 71 as disclosed in fig. 6 and further disclosed in col. 8 lines 38-46)**, wherein one plane of said first connecting conductor and one plane of said second connecting conductor are disposed at least partly opposite to each other at a certain interval **(as disclosed in fig. 6)**. However, Ueda fails to disclose capacitance is formed by said one plane of said first connecting conductor and said one plane of said second connecting conductor.

Ono et al. disclose capacitance is formed by said one plane of said first connecting conductor and said one plane of said second connecting conductor **(as shown in fig. 7 and further disclosed in paragraph 51-53)**.

Therefore, it would have been obvious to one of ordinary skills in the art at the time of invention to modify the cable 47 as disclosed by Ueda to be replaced with the first ring shaft 261, the second ring shaft 266 and the center shaft 262 as disclosed by Ono et al. One is motivated as such in order to provide a wireless apparatus having a foldable structure allowing improved antenna condition when the terminal is opened.

-Regarding claim 22, the combination further discloses said capacitance changes depending on the changes of the position of said first casing relative to

the position of said second casing of the cellular wireless unit (**Ono et al., as shown in fig. 7 and further disclosed in paragraph 51-53).**

-Regarding claim 23, the combination further discloses said capacitance changes depending on changes of the opposing area of said one plane of said first connecting conductor and said one plane of said second connecting conductor (**Ono et al., as shown in fig. 7 and further disclosed in paragraph 51-53).**

5. Claims 4-8, 10 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda (U.S. PATENT NO. 7,269,440) in view of Ono et al. (U.S. PG-PUB NO. 2001/0044320) and further in view of Desclos et al. (U.S. PATENT NO. 7,310,536).

-Regarding claim 4, the combination of Ueda and Ono et al. discloses all the limitations as claimed in claim 1. However, the combination fails to disclose an insulator is disposed between said one plane of said first connecting conductor and said one plane of second connecting conductor.

Desclos et al. disclose an insulator is disposed between said one plane of said first connecting conductor and said one plane of second connecting conductor (**coupling portions 20c and 20d are electrically isolated from the hinge 23 and portions 20c and 20d are disposed about hinge 23 such that portions 20c and 20d are linearly separated by a distance that defines a gap as disclosed in fig. 5a-5c and further disclosed in col. 6 lines 54-60).**

Therefore, it would have been obvious to one of ordinary skills in the art at the time of invention to modify the hinge portion as disclosed by Ueda and Ono et al. to include an insulator in between as disclosed by Desclos et al. One is motivated as such in order to reduce the loading and degradation of signals received or sent by the antenna.

-Regarding claims 5 and 20, the combination further discloses the at least partly ring-shape portion has an opening in which a pin constituting said hinge portion is inserted **(Desclos et al., as disclosed in fig. 5a-5c; and Ono et al., as disclosed in fig. 7 and further disclosed in paragraph 51).**

-Regarding claim 6, the combination further discloses said first and said second connecting conductors are disposed at both ends of said hinge portion **(Desclos et al., as disclosed in fig. 5a-5c).**

-Regarding claim 7, the combination further discloses the connecting conductors are opposed to each other at different intervals at said ends **(Desclos et al., as disclosed in fig. 5a-5c).**

-Regarding claim 8, the combination further discloses the connecting conductors are opposed to each other with different areas at said ends **(Ono et al., as disclosed in fig. 7 and further disclosed in paragraph 51).**

-Regarding claim 10, the combination further discloses the area with which said one plane of said first connecting conductor and the one plane of said second connecting conductor that is disposed at least partly opposite to each other at a certain interval varies depending on the positional relationship between

said first casing and said second casing (**Ono et al., as disclosed in fig. 7 and further disclosed in paragraph 51**).

Response to Arguments

6. Applicant's arguments filed 11/21/08 have been fully considered but they are not persuasive.

a. In page 8 of the remarks, regarding claims 1 and 11, applicant argues that Ono fails to teach or suggest that the substantially entire at least partly ring-shaped portion of the each connecting conductor is conductive. Ueda and Desclos fail to cure the deficiencies of Ono.

-The examiner respectfully disagrees. Elements 264 and 271 as shown in fig. 7 of Ono are indeed a part of the ring-shaped portion and they are conductive as disclosed in paragraphs 51-53. Accordingly, and as set forth in the 103 rejection above, Ono does teach the limitations of claims 1 and 11 and therefore, the secondary reference does not need to teach it in order to establish a *prima facie* case of obviousness as set forth under 35 USC § 103.

b. In page 8 of the remarks, regarding claims 21-23, applicant argues the relationship between capacitance of claim 21 and changes in the relative position of the first casing and the second casing and changes in the opposing area of the one plane of the first connecting conductor and the one plane of the second connecting conductor are not taught by the cited prior art.

-The examiner respectfully disagrees. The capacitance will change based on the

area and distance of the two conductors ($C = \epsilon_r \epsilon_0 \frac{A}{d}$). When the conductors 271 and 264 rotates (**Ono et al., as shown in fig. 7 and further disclosed in paragraph 51-53**), the position of the first casing and second casing and opposing area of the planes change as well. Therefore, the capacitance will change.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PING Y. HSIEH whose telephone number is (571)270-3011. The examiner can normally be reached on Monday-Thursday (alternate Fridays) 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay A. Maung can be reached on 571-272-7882. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/P. Y. H./
Examiner, Art Unit 2618

/Nay A. Maung/
Supervisory Patent Examiner, Art
Unit 2618